Diversification 4.0
The past, present and future of diversification
Introduction

How has the evolution of multi-asset investing shaped best practice today? And what does the future hold?

Until recently, many of the world's largest investors followed an investment approach that was inaccessible to many others. University endowments, sovereign wealth funds and major pension funds share the ability to assess and access the widest range of opportunities. Their investments spanned traditional and alternative asset classes, and employed a range of different strategies. The evolution of financial markets means that a broader range of alternative assets and strategies are now more readily accessible.

In this paper, we look at the evolution of multi-asset investing and consider the successes and failures of different approaches over 60 years. We look at best practice today and consider what this will look like in the future.

Next, we provide a guide to eight alternative asset classes, offering different risk and return characteristics. We set out the investment opportunity. We look at what drives their returns and set out the risks. We consider the diversification benefits they bring. And we explain how investors can access these markets.

Finally, we provide a practical guide to constructing a diversified multi-asset portfolio. We explain how investors can use alternative assets to build a more diversified portfolio. This requires adopting a broader perspective on investment risk.

Such an approach enables investors to access diversified sources of returns and build portfolios with the potential to deliver more consistent and attractive outcomes.
Executive summary

A diversified multi-asset approach incorporates the broadest range of investment opportunities. Applying this successfully requires a strong understanding of the fundamentals of each asset class. Risk cannot be eliminated. But it can be understood, monitored and managed. A diversified multi-asset approach – backed by a fundamental understanding of the drivers of return – has the potential to deliver more consistent and attractive outcomes for investors.

Three factors have reshaped the way that investors approach multi-asset investing.

1. Asset classes previously only accessible to the largest institutional investors can now be more readily accessed by a wider range of investors. Alternative assets can be accessed by investing in investment trusts and real estate investment trusts. These vehicles share common characteristics:
   • a company structure
   • permanent capital, allowing investment in illiquid assets
   • they are exchange traded
   • they are suitable for UCITS-regulated vehicles.

   Investment trusts can invest directly in illiquid asset classes while still providing daily liquidity. Over the short term, their return can be somewhat influenced by moves in broader markets and their shares can trade at a premium or discount to underlying value. However, over the long term, risks and returns should closely match those generated from holding the illiquid asset classes directly.

2. Our understanding of the underlying drivers of return has improved. Advances in quantitative techniques have provided investors with a better understanding of the underlying drivers of returns – and the associated risks. This has helped investors understand the many dimensions of diversification.

3. Major bear markets in two decades have provided practical lessons on the limits of investment theory. These lessons are driving change.

Going forward, we believe six factors will shape the way that investors approach multi-asset investing.

1. Investors continue to shift from traditional to alternative assets.

2. Investors are integrating environmental, social and governance (ESG) analysis into their decision-making process.

3. Opportunities to invest in emerging markets are increasing.

4. Advances in computer science allow a more granular analysis of diversification.

5. Regulatory regimes are modernising, exposing any mismatch of assets and liabilities.

6. Individuals have to take more responsibility for their financial futures.

These changes are increasing the scope for diversification. If done well, diversification can lead to improved long-term returns delivered in a smoother fashion.
"We argue there have been three step-changes in diversification strategy: the first driven by globalisation; the next two triggered by the two major bear markets."
What should investors expect from a diversified asset strategy? How has the evolution of multi-asset investing shaped best practice today? And what does the future hold?

Harry Markowitz, Nobel Laureate and pioneer of investment theory, called diversification “the only free lunch in finance”. It offers the prospect of reducing risk without sacrificing returns.

The two major equity bear markets during the last two decades tested this theory. Traditional balanced portfolios suffered significant declines during the bursting of the dotcom bubble. Gains from government bonds were insufficient to offset equity losses. Investors responded by diversifying across a broader range of asset classes and strategies. Yet most multi-asset funds suffered similar declines during the global financial crisis.

The recovery from 2009 lows has provided a different challenge. Most diversified multi-asset portfolios have lagged equity markets since the last crisis.

Today, bond yields across the developed markets are extremely low. They offer little protection to investors if inflation picks up. Equity market valuations appear rich, leaving markets vulnerable when this elongated economic cycle ends. This increases the appeal of alternative asset classes, driven by different fundamentals.

What should investors expect from a diversified multi-asset portfolio? To help answer this question, we look at the successes and failures of multi-asset investing over sixty years. We examine how investment strategy has evolved since the 1952 publication of Markowitz’s landmark paper, *Portfolio Selection*. We argue there have been three step-changes in diversification strategy: the first driven by globalisation; the next two triggered by the two major bear markets.

The pre-history of diversification

Diversification is as old as finance. Cuneiform tablets discovered in modern Turkey capture the trading activities of merchants from Assur, an ancient Mesopotamian city-state. Around 4,000 years ago, these traders established sophisticated equity trading partnerships that extended over multiple years.¹ These allowed investors to diversify their risks by funding more than one partnership.

The insurance industry dominated institutional investing from the early nineteenth century to the middle of the twentieth. Diversification of risk across the pool of policyholders provided the foundations for the industry. Interest rates fell steadily in the second half of the nineteenth century. Insurance companies switched from public to private credit markets in search of higher returns.²

² Craig Turnbull (2018). *200 Years of Asset Allocation: Lessons From the Pioneers of Investing.*
In 1981, Antoine van Agtmael of the International Finance Corporation coined the phrase 'emerging markets'. Investors had observed three decades of rapid economic development in Japan. They saw the ‘Asian Tiger’ economies – Hong Kong, Singapore, Korea and Taiwan – successfully adopt similar industrialisation strategies. This triggered an asset allocation shift from developed market to emerging market equities.

Strong economic performance in the emerging world also improved debt sustainability. Emerging market debt enjoyed strong institutional inflows.

Financial innovation in the US led to the creation of three new markets.

1. The mortgage-backed securities market came into existence in 1968. Today, these securities make up more than a quarter of the Bloomberg Barclays US Aggregate Index of investment-grade bonds.

2. The high-yield bond market took off in the 1980s. A leveraged buyout boom created a steady supply of bonds.

3. The leveraged loans market developed in the late 1990s. Loan documentation was standardised, allowing a secondary market to evolve.

Academic studies uncovered two styles of equity investing that attracted significant attention. A 1981 study by Rolf Banz identified the strong historic performance of smaller companies. Investment managers responded by launching a number of dedicated smaller companies funds. In 1993, Eugene Fama and Kenneth French published research on a three-factor model. This included ‘value’ alongside ‘size’ and ‘market’ factors. US investors started to diversify across value and growth managers.

By the turn of the millennium, investors were diversified across:

- domestic and international equities
- value and growth stocks
- large-cap and small-cap stocks
- developed and emerging markets
- government, mortgage and corporate bonds.

Yet this mix was still a blend of equities and bonds. This strategy was stress-tested when the technology bubble burst in 2000. Equity and credit markets fell in tandem. Widening credit spreads meant the more diversified fixed income exposures lagged behind government bonds. Compared to the two-asset 60/40 allocation, the more diversified strategy proved more vulnerable to a severe market decline. Correlations between alternative assets increased during times of stress.

**Diversification 3.0: the Yale model**

One pioneering portfolio manager emerged from the technology bust with a lasting legacy. Under the leadership of David Swensen, the Yale Endowment generated positive returns in 2001 and 2002. This came on top of strong returns over the previous decade.

**Diversification 4.0: alpha, beta and beyond**

Where does that leave diversification today? Two trends have reshaped investment strategy over the decade since the financial crisis. First, investors have gained a better understanding of a broader range of asset classes and strategies. This has allowed them to incorporate new asset classes and strategies in their multi-asset portfolios. Second, advances in quantitative techniques have increased the toolkit for both risk management and return generation.

The aftermath of the crisis created a growing need for capital in markets previously dominated by hedge funds and other specialist investors. Banks were reluctant to lend. Asset owners were reluctant to place their investments in expensive and complex hedge fund strategies. That left a gap in the market.

Specialist investors started to offer simpler exposures to alternative forms of credit. The range of funds offering exposure to real assets increased. There were also growing opportunities to finance more specialist markets – insurance-linked securities, healthcare royalties and litigation finance. Investment in listed vehicles offering exposure to these alternative investments grew rapidly. These are described in more detail in part II, *A guide to alternative asset classes*.

Mainstream asset managers also adopted a number of the techniques developed by hedge funds. These included combining long-only and long-short exposures across a broad range of markets. Advances in quantitative techniques provided investors with a better understanding of the underlying drivers of returns – and the associated risks. Fund managers responded by isolating these underlying factors. Equity portfolios now offer targeted exposure to factors such as size, value, momentum, quality and low volatility.
There are three possible sources of return from investing in a factor over the long-term: fundamental, behavioural and structural. A fundamentally-driven return is earned for taking on higher risk – for example the higher yield on offer from higher risk bonds. Behavioural returns are generated by strategies that profit from the predictable herd-like behaviour of the average investor. Structural returns are created when investors become forced buyers or sellers of securities because of the rules they operate under. These factors can be combined in a way that improves diversification.

Quantitative analysis provides a wider dashboard of risk measures and techniques. These help investors understand the many dimensions of diversification.

**The benefits (and limits) of diversification**

Will Diversification 4.0 deliver advantages over previous models? To answer this, investors must first decide what they should expect from a diversified multi-asset portfolio. Are they diversifying to protect their portfolios against bad times? Or are they looking for long-term returns from an expanded investment universe?

There are four assets that investors typically use to hedge against adversity.

1. **Domestic government bonds** can protect investors against the risks of deflation.
2. **Cash** reduces portfolio volatility and gives the option to buy at lower prices during market setbacks.
3. **Gold** typically performs well when the threat of inflation increases, or political uncertainty rises.
4. **Investors can purchase options** whose value increases when the underlying asset falls in value.

These strategies share one common feature: they reduce long-term return potential. Government bonds and cash offer return premiums below those of equities and corporate bonds. Gold has historically been a store of value rather than a source of returns. Option strategies are a form of insurance. They deliver a positive expected return to the seller of the option rather than the buyer.

By contrast, a diversified portfolio of alternative assets can generate returns comparable to traditional risky assets: equities and corporate bonds. Greater diversity can bring greater certainty in returns over the long term. A broader investment universe increases the possibility of identifying undervalued assets.

What are the limits of diversification? Economically sensitive assets suffer simultaneously during recessions. Illiquid assets can be marked down in value when liquidity becomes scarce. Less economically sensitive assets can provide genuine diversification, but may come with other risks. A dynamic approach to asset allocation can reduce risk but increases reliance on manager skill. So too do some of the techniques adopted from hedge funds. Risk models provide an objective view of a portfolio’s risk exposures but achieving effective diversification still requires judgement.

**Diversification 5.0?**

What is the future for diversification? We see six trends that are reshaping portfolio construction.

First, the shift from traditional to alternative asset classes is set to continue. The regulatory pressures for banks to increase equity capital will restrain bank lending. In addition, the nature of investment is changing. Investment in intangible assets exceeds investment in tangible assets in the US and the UK. These investments involve greater uncertainty over expected return. They are more readily financed by private than public markets.

Second, investors are integrating environmental, social and governance (ESG) analysis into their decision-making process. Understanding the risks and opportunities presented by ESG issues is a fundamental ingredient of investment, alongside traditional analysis.

Third, rapid economic progress means the ‘emerging market’ label no longer captures the whole story. Emerging economies account for 60% of global activity. Yet their financial assets make up only 10% of the global financial system. As these markets increasingly open up to investors, asset owners will need to gain access to the full range of investment opportunities to provide true diversification.

Fourth, advances in computer science allow a more granular analysis of diversification. However, quantitative risk models continue to have their limitations. A qualitative assessment of risk and return will remain vital to achieving effective diversification.

Fifth, regulatory regimes are modernising in many countries. For insurance companies and pension schemes, this exposes any mismatch of assets and liabilities. They will need to embrace a more sophisticated approach to risk management.

Sixth, individuals will have to take more responsibility for their financial futures. Neither the state nor their employers will provide generous pensions. The asset management industry can help. It can provide the right tools, solutions and advice. These solutions must include making this broader range of investments accessible to all.

Increased diversification brings increased choice. Benefiting from this more diversified approach requires skill and experience in a broader range of investments. This extra effort can bring rewards. If done well, diversification can lead to improved long-term returns delivered in a smoother fashion.

So was Markowitz right to describe diversification as “the only free lunch in finance”? Not a free lunch perhaps, but definitely a healthy balanced diet.

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1. A long short strategy allows investors to profit from the relative performance of one security compared to another. It involves buying a security that is expected to outperform and selling the security expected to underperform. However, the investor does not hold the security being sold. In order to sell the security, the investor must first borrow it from another investor, for which the lender receives a fee. This is a common hedge fund strategy. By contrast, long-only simply means buying a security.

“The aftermath of the global financial crisis created a growing need for capital to finance alternative assets.”
A guide to alternative asset classes

There is no universally agreed definition of what are alternative and traditional investments. We think all investors would agree that asset classes such as equities, developed government bonds and investment grade corporate bonds are traditional investments. Beyond that asset classes such as property, emerging market bonds and asset-backed securities may or may not be classified as alternatives.

In this section we are not looking to provide a full mapping of the alternative universe. Instead we look at eight asset classes that have interesting return and risk characteristics and are unlikely to form significant parts of most investors’ portfolios. These include niche investment areas, such as litigation finance and healthcare royalties, through to very large asset classes, such as asset backed securities and emerging market local currency bonds. The common link is that all can now be accessed in a liquid fashion and be building blocks for a genuinely diversified multi-asset portfolio.

We set out the investment opportunity for each asset class. We look at what drives the returns and set out the risks. We consider the diversification benefits they bring. And we explain how investors can access these markets.

The evolution of the listed alternatives market

Real estate investment trusts (REITs) were introduced in the US in 1960. REIT regimes now exist in over 30 countries globally, enabling investors to access less liquid real estate through a tradable equity structure. Today REITs are the most popular form of listed real estate investment, with a global market capitalisation of over $1 trillion.

Investment trusts do not, however, only offer real estate exposure. The approach can be traced back further, to 1868, when the first such vehicles were launched on the UK stock market. These earlier investment trusts were established to provide investors with a fifth characteristic, an income focus. This is also true of REITs, since in many countries they must distribute at least 90% of income.

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The aftermath of the global financial crisis created a growing need for capital to finance alternative assets. Banks and hedge funds have retreated from this role. Permanent capital vehicles provide an attractive source of finance for long-term projects, such as infrastructure.

Falling interest rates added to the appeal of these typically high-yielding alternative assets. However, many of the alternative assets are illiquid and therefore unable to be held in open-ended funds. Therefore, a growing supply of listed alternatives met growing demand from investors looking to diversify their portfolios.

This increased opportunity set includes the following assets.

- **Permanent capital**: This structure provides the company with ‘permanent capital’, enabling the companies to invest in less liquid investments. However, the governance structure does provide the option of unwinding the company if shareholders collectively act to achieve this.

- **Exchange traded**: After the initial launch, investors can add or reduce their holdings by buying or selling shares on a stock exchange. The share price can deviate from the underlying asset value. The company has the option to issue new shares. This commonly occurs when strong demand leads the share to trade at a premium to underlying value. The board of directors can also choose to buy back shares, which typically occurs when the shares are trading at a discount to the underlying value.

- **Suitable for UCITS-regulated vehicles**: This structure can enable fund managers of UCITS-regulated funds to access alternative assets that they are restricted from investing in directly.

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The past 10-15 years has seen a marked growth in the listed alternatives market (see chart 1). This is not just in terms of assets but also in terms of the number of companies and breadth of underlying investment opportunities.

2. **Company structure.** They are public companies with a board of directors, accountable to shareholders. This governance structure means that the board can hire managers to implement investment strategy – and fire them if they fail to deliver.

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This increased opportunity set includes the following assets.

- A broad range of infrastructure investments. This initially focused on social infrastructure assets, such as schools and hospitals, but has seen increasing availability of renewable assets such as wind and solar farms. More recently we have seen energy storage assets (i.e. batteries).

- Alternative property investments such as social housing, student accommodation, distribution centres and residential property.

- Debt investment such as loans, asset-backed securities and direct lending.

- Specialist investments such as insurance-linked securities, litigation finance, healthcare royalties, aircraft leasing and shipping.
Investment companies, direct investment and equities compared

The infrastructure sector provides an illustration of the differences between investing directly, investing in a company operating in the sector and investing through an investment trust.

Direct investment (via infrastructure fund)

Large institutional investors, such as university endowments and sovereign wealth funds, are able to invest directly in illiquid assets. But even the biggest funds cannot finance a diversified portfolio of global infrastructure assets. Specialist infrastructure funds offer this opportunity to investors able to commit their capital for 10 years or more. These are not listed vehicles and are unsuitable for individual investors or UCITS funds. The returns received have limited sensitivity to the economic cycle and no significant correlation to equities.

Infrastructure company

Infrastructure companies make up a significant portion of global equity markets and are held in mainstream equity portfolios. The sources of return vary by business. Some capture the returns on the underlying infrastructure assets. Others focus on developing or managing these assets, where profits can be largely independent of changes in the value of infrastructure assets. Share prices are driven by investors’ evaluation of many factors, including earnings prospects and balance sheet strength. This has historically been a defensive sector offering a high yield, but returns are somewhat correlated to the broader equity market.

Infrastructure investment trust

Investment trusts can hold a similar portfolio of underlying assets as an unlisted infrastructure fund. This means that cash flows and changes in asset value are similar too. The shares offer daily liquidity and trade at a premium or discount to the underlying value. The historic correlation to equities is very low.

Diversification characteristics of listed alternatives

Listed alternatives can perform differently to equities, bringing diversification benefits to multi-asset portfolios. One concern for REIT investors has been their historic sensitivity to equity markets, especially at times of market stress, such as during the global financial crisis. But investing in listed alternatives does not have to result in greater equity sensitivity.

Over the long-term, the performance of any investment company is driven by the underlying cash flows generated by its investments – regardless of whether those investments are properties, wind farms or specialist credit assets. Some of these asset classes are naturally more economically sensitive than others. Indeed, a key advantage of renewable infrastructure, for example, is the lack of correlation between its returns and the returns produced by other financial markets. Large, global REITS, by contrast, are typically more sensitive to the health of the global economy and therefore naturally more sensitive to economic drawdowns.

Another key difference to REITs is that listed alternatives do not typically feature in the portfolios of mainstream equity investors.
As such, they are less likely to be caught in indiscriminate market sell-offs.

The listed alternatives universe has fared well historically in periods of market stress. During periods when equities have fallen significantly, most saw modest falls or even positive returns. For example, global equities fell by 17.3% between April 2015 and February 2016. Over this period, the average return of listed alternative companies was +2.9% (see chart below).¹

In future periods of equity market stress we may see different performance from listed alternatives. It is therefore important to carefully consider how each investment might perform in different extreme scenarios.

This includes considering:

- the nature of the underlying assets
- how concentrated the shareholder base is
- the tools available to Boards to manage any discount to underlying value that might arise.

In conclusion, the listed alternatives market gives investors access to a range of alternative assets that have typically only been accessible to the world’s largest investors. This has increased the scope for investors to build genuinely diversified portfolios.

¹ Aberdeen Standard Investments, Bloomberg. Performance shown from 28 April 2015 to 11 February 2016. Global equities represented by MSCI World (hedged to GBP); the listed alternatives shown represent all held in diversified assets portfolios at the time of this analysis in December 2017 that existed for the whole of this period, with the exception of private equity and CLO equity holdings (which are held purely for higher return expectations than for diversification benefits). The average is a simple average of all of these returns.
Aircraft leasing

In brief
Half the commercial airline fleet is currently leased. Aircraft leasing can deliver attractive returns. The key risks relate to airline credit risk and the second-hand value of planes.

Investment opportunity
The number of people travelling by air is growing. Boeing, the plane manufacturer, expects air traffic growth of more than 4.6% per year over the next 20 years. It also predicts that the global fleet size will double over this time.1 Rising incomes and a growing middle class in emerging markets are expected to continue to be the biggest drivers of growth.

While these figures bode well for airlines, buying planes is an expensive business. One of the largest sources of airline financing used to be bank debt, often from European commercial banks. But funding from this source began to dry up in the aftermath of the financial crisis, with global economic uncertainty and the European sovereign debt crises causing some banks to leave the market completely. This type of financing became even less common after banks began to reduce the amount of debt on their balance sheets, partly as a result of new regulations.

Other forms of aircraft financing, such as the operating lease structure, therefore became more popular (see chart 3).

What are the mechanics of renting planes? Under an operating lease agreement, an airline rents a plane for an agreed period of time from a leasing company. The leasing company that owns the aircraft (the lessor) has sole claim to it. Meanwhile, the airline (the lessee) pays for the right to use it. If market conditions are favourable when the lease expires, the airline can try to negotiate a new lease. If they are not, it can return the aircraft. Leasing companies take on two risks. The first is that the airline will remain creditworthy. The second is that the second-hand value of the plane will meet expectations.

The practice is increasing in popularity. According to the Centre for Aviation Fleet Database, leasing currently accounts for half of the world’s commercial aircraft fleet.

**What drives returns and what are the risks?**

Leasing companies tend to purchase aircraft directly from manufacturers like Boeing and Airbus. As important clients of these companies, larger lessors can negotiate attractive discounts. They use both equity and debt (a 60% to 75% loan-to-value ratio is common) to finance their purchases.

Lessors use payments from the airline to pay off their debt, pay fund costs and pay a yield to the equity provider. The listed funds aim to pay annual dividends of around 8% to 9%. In addition, there is potential for additional capital return when they sell the planes at the end of their leases.

The investment case depends on two things: the continued creditworthiness of the lessee and the second-hand value of aircraft. A higher risk premium is typically required for a less credit-worthy lessee. Similarly, a higher premium is required where there is greater uncertainty over the second-hand value of the aircraft. For example, the A380 a relatively new large twin-aisle aircraft, has only recently entered the secondary market.

Aircraft leasing has become increasingly competitive. Leasing companies are paying higher prices for aircraft and airlines are negotiating better lease terms. As a result, it is becoming harder to maintain returns at historic levels. To counter this, some leasing companies are looking to acquire older planes to lease to counterparties with lower credit quality.

**Diversification benefits**

Investing in aircraft leasing at the correct time in the cycle can improve the risk-adjusted return of a diversified portfolio. Nevertheless, it is important to continue to monitor the deals being entered into by leasing companies. Investors must assess the health of the secondary market for aircraft and the continued creditworthiness of airlines.

**How to access the asset class**

Often, lessors raise equity capital by setting up funds to attract external investors. The first listed aircraft leasing fund launched in 2010. Currently, there are five funds listed on the London Stock Exchange (LSE) with a combined market capitalisation of £1.5 billion.2 These funds invest in twin-aisle planes and lease them to a variety of airlines (including Emirates, Etihad, Norwegian Air and Thai Airways).

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2Market capitalisation as at 21/01/19. Source: Bloomberg.
Asset-backed securities

In brief

Asset-backed securities are bonds backed by assets such as mortgages and corporate loans. These securities offer different levels of risk and return. They typically offer a yield premium over traditional bonds.

Investment opportunity

Asset-backed securities (ABS) are bonds backed by a diversified pool of assets such as mortgages, corporate loans, car loans and consumer debt. For investors, they are a way of accessing traded debt securities with different risk and return profiles.

Many people associate ABS with the poor performance of US ‘sub-prime’ mortgages during the global financial crisis. We think this is unfair. Sub-prime mortgages were just one of the many types of credit used to create asset-backed securities. By and large, it was poor underwriting practices and naive assumptions about house prices that led to widespread defaults. ABS backed by other types of assets performed as expected.

ABS offer a number of appealing characteristics. Floating rates provide protection from interest rate increases. In general the asset class offer attractive yields compared to similarly-rated corporate bonds. Their structures give investors the flexibility to choose from a range of risk and return options.

What drives returns and what are the risks?

When a bank makes a loan, it creates an asset that can be used to back an ABS. The bank, or another arranger, groups a number of loans together to make a diversified portfolio. For example, a portfolio of loans to businesses will provide the asset backing for a collateralised loan obligation (CLO).

An independent, custom-built investment vehicle then buys the bundle from the arranger. This vehicle is a distinct legal entity. It has the sole purpose of purchasing the assets and keeping them legally separate from the arranger. The vehicle receives interest over time and principal on expiry of the loan.

The vehicle issues a series of bonds secured against the underlying pool of assets, grouped into tranches. Through this process, an illiquid pool of assets becomes a series of tradable instruments. Each tranche has a different level of credit risk and potential return.

Tranches range from senior (AAA) through to mezzanine (meaning mid-level, falling between the most senior bonds and equity) and then to equity. Investors holding the most senior levels are first to receive interest payments from the
underlying loans. The remainder flows sequentially down the tranches. Conversely, in the event of a default, equity holders are the first to bear any losses.

ABS are structurally enhanced in a number of ways. These measures are designed to protect more senior bondholders from deterioration in underlying credit quality. Over-collateralisation is one such enhancement, when the value of the underlying pool of assets exceeds that of the ABS.

This structural protection has important consequences for ABS bond holders. For example, an investor holding a direct portfolio should expect a small percentage of loans to default each year. But an investor in the AAA tranche of a CLO would expect no default loss against the same pool of loans under most scenarios. The lower-ranking tranches absorb the losses. In return for taking the least risk, investors in the senior tranche receive the lowest level of return.

Mezzanine bond holders retain some of the structural protection of more junior tranches but offer a higher yield. Investors in equity tranches have the highest expected return, but are also the first to absorb any losses on the underlying portfolio.

What is the role of ABS? For banks, moving loans off their balance sheets leaves them with more funds available for other purposes. These funds can finance new loans, for which they receive arrangement fees, or reduce the amount of capital that they are required to hold by regulators. For investors, ABS provide access to a wider range of assets. For society, if managed responsibly, this reallocation of risk can lead to increased stability and efficiency in the financial system. It places long-term assets in the hands of investors with long-term liabilities, such as pension funds, rather than banks financed through short-term deposits.

Clearly, the sub-prime crisis challenges this theory and it tainted the reputation of ABS. The securitisation of sub-prime US mortgages helped trigger the collapse of Lehman Brothers and other financial institutions. Irresponsible lending, inaccurate credit ratings and ABS managers incentivised by the size of their assets rather than on the returns on those assets all played a part. Investors, regulators and financial institutions learned a number of (expensive) lessons.

The failure of this segment of the market hides the fact that most ABS categories did not see the same spike in defaults – a surprise to many. Losses were concentrated in US sub-prime lending and a few closely related areas of the market.

Times of market stress may lead to some mark-to-market losses as spreads move wider. However, in comparison with the period prior to the global financial crisis, spreads are already materially wider. Furthermore, there are fewer leveraged investors in comparison with the global financial crisis. Therefore, we believe a sell-off would be less extreme in a similar environment. However, investors should undertake fundamental analysis to understand the risks that they are accepting. This requires a detailed understanding of the underlying investments.

Another perceived risk is the well-documented loan market concerns – primarily weaker credit metrics and fewer protective covenants. These have negative implications for CLOs, in particular the more junior tranches. However, CLOs offer higher yields than similarly-rated corporate bonds (see chart). This higher return compensates investors for the additional complexity of these structures and the low number of specialist managers operating in the asset class. It also reflects the continued stigma of the financial crisis episode.

**Chart 4: Credit spreads: CLOs and corporate bonds**

<table>
<thead>
<tr>
<th>AAA</th>
<th>AA</th>
<th>A</th>
<th>BBB</th>
<th>BB</th>
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<td>CLOs</td>
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<td>0.5%</td>
<td>0.8%</td>
<td>2.4%</td>
<td>9.2%</td>
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<tr>
<td>$ Corps</td>
<td>&gt;3% additional spread</td>
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**Historical default rates**

<table>
<thead>
<tr>
<th>US CLO</th>
<th>AAA</th>
<th>AA</th>
<th>A</th>
<th>BBB</th>
<th>BB</th>
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</tr>
</thead>
<tbody>
<tr>
<td>0.0%</td>
<td>0.0%</td>
<td>0.5%</td>
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</tbody>
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Source: TwentyFour, Barclays, 29 March 2019

**Diversification benefits**

Each ABS structure holds a diversified pool of assets. To some extent, the underlying portfolio may be influenced by the same macro-economic factors that affect other, more traditional assets. However, both senior and mezzanine tranches offer high levels of structural protection from losses on the underlying portfolio.

For example, CLO notes have experienced default rates well below those of loans themselves – and below similarly rated corporate bonds (see table). For AAA tranches, the default rate based on 20 years of data from S&P on US CLOs is 0.0%, 0.3% for BBB and 1.7% for BB.

**Access**

There is a broad and deep market in ABS. Investors can access the asset class via specialist ABS funds or listed investment companies.
“To compensate for the higher risk of holding loans compared to holding cash, investors require a higher return.”
Corporate loans

In brief

Corporate loans are floating-rate, senior-secured debt issued by companies. They rank higher in the capital structure than bonds or equities, leading to higher recovery rates should defaults occur.

Investment opportunity

Over the past decade, yields on many developed market bonds have declined materially. In some markets, they have even turned negative. This means investors are effectively paying for the privilege of holding bonds. As a result, investors have sought alternative sources of income – ones that also provide protection from rising inflation and interest rates.

One such source is corporate loans. These are floating-rate, senior secured debt issued by companies. They are primarily rated below investment grade. Some countries refer to them as ‘bank loans’ or ‘senior secured loans’. They offer borrowers relatively easy access to funding compared to issuing a bond. And while the loan repayments can be more expensive than a corporate bond, they offer more flexibility. This includes the ability to pre-pay some or all of the debt.

What drives returns and what are the risks?

Corporate loans rank higher in the capital structure than bonds or equities. This means they receive priority in payment if the company falls on troubled times. As a result, recovery rates on defaulted loans have averaged close to 80% historically. This compares with an average rate of around 40% for high-yielding bonds since 1982, according to research by JP Morgan. Loans have also typically had stronger covenants than bonds, which gives the lender superior rights if a creditor enters financial difficulty.

These attractions have led to substantial growth in the number of outstanding loans. This growth has come from several sources. Collateralised loan obligations (CLOs) are the largest buyers of loans. These vehicles hold portfolios of loans and issue a range of securities against them. The continued hunt for yield has also led to increasing investment in loans from both institutional and retail investors; through products such as mutual funds and exchange-traded funds (ETFs).

This strong demand for loans has had a profound effect on the market. To compensate for the higher risk of holding loans compared to holding cash, investors require a higher return. This return is the credit spread above LIBOR (the London Interbank Offered Rate). But, over time, spreads for both newly issued debt and existing loans have narrowed. Even after greater loan market volatility towards the end of 2018, the credit spread of the S&P LSTA Leverage Loan 100 Index from a peak of over 14% in 2009 to just 3.4% as at 7 June 2019 (see chart). This index represents the largest, most liquid loans.

Diversification benefits

Corporate loans have floating-rate coupons, where the income rises as interest rates increase. This is in contrast to corporate bonds, which are fixed rate in nature. As a result, corporate loans have historically outperformed corporate bonds in an environment of rising interest rates. The performance of corporate loans will lag that of corporate bonds in an environment of falling interest rates.

How to access the asset class

Investors can access the asset class via specialist loans funds, listed investment companies and ETFs.
Healthcare royalties

In brief
Healthcare royalties help finance the research and development costs of new drugs. In return for upfront funding, royalties provide a yield backed by the sales of these drugs.

Investment opportunity
The term ‘royalty’ is centuries old. It stems from the gold and silver mines in Great Britain, which at one time were the property of the crown. In return for an upfront payment, interested parties were granted the right to mine ‘royal’ metals. Subsequently, many other industries – from oil and gas to music – have borrowed the concept.

Royalties allow entities to collect future cash flows, in whole or part, in exchange for an upfront payment. They help finance research and development. The future cash flow payments directly link to a particular product’s sales over a set timeframe. Royalties are an alternative financing option to traditional forms of borrowing and equity, but come with a similarly structured financial contract. An average of industry experts’ estimates suggests that the healthcare royalty market offers around $14 billion per year of deal flow.

Healthcare royalties have become an increasingly integral part of the pharmaceutical industry since their infancy in the early 1990s. Before healthcare royalties became widely used as an alternative financing solution, large pharmaceutical companies funded the drug development process in-house through their own research and development (R&D) arms.

Over time, the need to find new ways of funding drug development became more urgent. One of the most pressing was the high risk and expense associated with funding the early stages of development. Pressure also mounted as many key drugs lost exclusivity to generic equivalents, reducing revenues.

It’s estimated that, by 2002, external developers produced 16% of all new drugs at the ten largest US pharmaceutical companies. By 2016, 70% of the sales generated by large US pharmaceutical businesses were of drugs made by small to mid-size developers. This transformation of financing solutions has led large pharmaceutical companies to outsource drug discovery efforts to innovators in a resource-efficient manner.

There are three broad categories of innovators: small and mid-sized biopharmaceutical companies, inventors, and universities. Each has a funding need. For example, a university
may seek to sell a royalty to fund a new building or research facility. A sizeable opportunity now exists for alternative investment managers to step in and bridge the funding gap.

With changing demographics, global pharmaceutical sales are expected to grow over the coming decades. The growth in drugs, such as those used in the treatment of cancer, has expanded faster than the overall market at 17% per annum since 1990 (see chart below). Institutional investors can help to address clinical needs by providing financing to fund pharmaceutical research.

**What drives returns and what are the risks?**

Healthcare royalty strategies offer investors access to a high level of income. Royalty streams yield between 5% and 20%, depending on the stage of the product’s clinical development. Payments are often tied to the life of a patent, paid regularly until patent expiration.

Attractive returns can also be generated from the provision of debt to biotechnology companies, secured against the long term revenue stream from royalties.

The risks for individual drugs are highly idiosyncratic. For the overall asset class, the risks are linked to healthcare spending, which is relatively independent of broader economic trends. Royalty payments are based on the success or otherwise of the drug. This means anything that reduces product sales – competing medicines, lower pricing, safety restrictions – will result in a fall in the value of the drug.

**Diversification benefits**

Historically, the healthcare royalty market has had a low correlation to credit or equity markets.

Royalties are generally derived from pharmaceutical sales. These have grown consistently, even during periods of low or negative GDP growth. Demand is immune to periods of volatility in the equity and debt markets.

Instead, the success of the strategy is more closely linked to broader trends in demographics like the ageing of the population, which stimulates healthcare spending. Royalty cash flow streams for the healthcare sector are influenced by patient populations – and their treatment needs. Consequently, they do not move in line with financial markets.

**How to access the asset class**

The listing of BioPharma Credit in 2016 provided the first opportunity for investors to access this asset class in a daily dealing vehicle. The company trades on the London Stock Exchange. It has a market capitalisation of over £1 billion.1

1 London Stock Exchange, 23 May 2019.

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**Chart 6: Oncology drug sales**

Source: Pharmakon Advisors, December 2018
“Although the cases or trials involved may be complex, the litigation finance process itself is relatively straightforward.”
Litigation finance

In brief
Litigation finance provides funding for corporate litigation cases. In return, the finance provider receives a percentage of the awards paid if the case is won.

Investment opportunity
Court cases can be costly, particularly corporate ones. Providers of litigation finance carry the expenses of bringing carefully selected cases to trial. They do this in return for a percentage of the damages or awards paid should the complainant win the case. If the complainant loses, the financing company bears the legal costs. Finance providers therefore aim to fund the cases with the best chance of victory.

The larger litigation finance providers deal with wide-ranging and complex corporate cases as opposed to personal injury claims for individuals. This is quite different from ‘no win, no fee’ accident claims for individuals.

This third-party finance model is attractive on two levels. First, it appeals to claimants for whom the costs of a long or complicated trial may be unaffordable or which present unattractive accounting complexities. This may be the case even for large corporations. Second, it can be an attractive option for the legal firms of claimants. Typically, these operate under a partnership structure, which means they can lack the working capital needed to fund lengthy and complicated trials.

Although the cases or trials involved may be complex, the litigation finance process itself is relatively straightforward. Usually, a funding provider will be approached by a law firm acting on behalf of a client. Or the client, the complainant, may make the initial approach directly. The litigation company will vet the case and decide whether to fund it. This due diligence includes:

- assessing the likelihood of the case being won
- considering the creditworthiness of the defendant
- gauging how attractive a potential funding deal would be from a financial perspective.

What drives return and what are the risks?
Risk and return for individual cases are readily understood: the case must be won to generate a return. The risk is that the case is lost. The fee to be paid to the litigation finance company may be a percentage of the final damages awarded. It can be a multiple of the funding figure provided. Or a combination of these.

Investors in companies offering exposure to litigation finance must also consider the risks associated with the company. These include its ability to access, evaluate and manage a portfolio of cases.

Diversification benefits
The returns generated by litigation finance are based on the outcomes of legal cases and therefore should be almost entirely independent of factors such as economic growth, financial markets and interest-rate cycles. As a result, litigation finance can be an excellent source of diversification for investors.

How to access the asset class
There is a limited but growing choice of investable vehicles. Burford Capital is the largest provider of litigation finance. Its shares listed on the London Stock Exchange in 2009. Most of its clients are in the United States, but it is increasingly funding cases around the world. Since launch, litigators financed by Burford have won a sizeable proportion of their cases. This has resulted in Burford earning a return on its investments of well over 20% per annum.¹

¹Burford interim report 2019, Burford Capital.
Local currency emerging market bonds

In brief
The local currency emerging market bond universe is a large and highly liquid market. It is diversified across over 20 countries with an average investment-grade credit rating. They offer an attractive yield.

Investment opportunity
Emerging market debt is one of the largest, most liquid asset classes in the world. It has an estimated market capitalisation of $11.6 trillion, of which sovereign bonds issued in local currencies account for 72%.

The JP Morgan GBI Emerging Market Global Diversified Index, which tracks local currency sovereign bonds across 19 developing nations, has an average yield to maturity of 6.1%. That’s comfortably higher than the comparative yield of developed market equivalents (see chart below).

At the same time, the average credit rating of instruments in the index is BBB. This means emerging market debt offers investors both strong relative yield and investment grade credit quality.

The fundamentals of emerging market economies have improved strongly over the past 30 years. In many cases, authorities have tightened regulatory and financial controls and adopted orthodox monetary policies allied to fiscal reform. Fundamentals are further supported by strong demographic changes, including a growing middle class.

By contrast, authorities in advanced economies have spent much of the past decade propping up their markets. Government spending has added enormously to their debt burdens. These countries are suffering from weakening demographics. This will act as a drag on future growth.

It is in emerging markets that investors are more likely to find growth. The International Monetary Fund has forecast that developing economies will increase their share of global gross domestic product to 63% by 2023, based on purchasing power parity.

Despite an attractive yield spread over US Treasuries and low default risk, emerging market bonds remain significantly under-represented in most portfolios.

What drives returns and what are the risks?
The asset class offers an attractive yield, both in absolute terms and in comparison to developed markets. Additionally, currency returns provide a key component of the risk premium that investors look to
capture. This return can come with a lower volatility than many would expect. Analysis of historic returns reveals local currency emerging market bonds have experienced an average volatility of 7.3%, compared to 12.8% for global equities.2

Investors in the asset class need to consider the sensitivities of emerging market currencies to economic conditions, commodity prices and debt vulnerabilities. Consideration also needs to be given to specific idiosyncratic country risk.

Diversification benefits

Improvements in economic management have enabled a growing number of emerging market governments to issue bonds in local currencies. This can help to reduce exposure to external shocks. When the MSCI World Index sank more than 50% in the 16 months to February 2009, emerging market bonds provided a positive return of almost 19% (see chart below).2

An appropriate currency hedging strategy can enhance the diversification benefits of the asset class without materially affecting expected returns. This can include funding the purchase of emerging market bonds using a basket of developed market currencies rather than simply hedging all exposures back to base currency.

How to access the asset class

The asset class is highly liquid and can be accessed through a range of open-ended funds and ETFs.

1 JP Morgan, 31 December 2018
2 This analysis (and all other mentions of returns in this document) uses monthly returns for the JP Morgan GBI EM Global Diversified index against our funding basket from the inception of the index on 31/12/2002 to 30/6/18. For equities we use the MSCI World Index (hedged to GBP) over the same period.
Renewable infrastructure

**In brief**
There is an increasing need for renewable infrastructure assets, such as solar and wind farms. Returns from these assets come from a mix of government subsidies and the sale of power to utility companies.

**Investment opportunity**
We are no longer entirely reliant on traditional, finite energy sources. Instead, the world is shifting towards renewable sources of electricity. Many governments are investing in ‘green’ energy, as they try to curtail the effects of climate change. For example, the European Union (EU) countries have introduced renewable energy targets. These are needed to meet the Renewable Energy Directive's goals. By 2020, one-fifth of the EU’s energy must come from renewable sources.

Forms of renewable energy include wind and solar farms, hydroelectric, geothermal and biomass power-generating facilities, as well as wave and tidal technology. The need for funding to build and operate these facilities has given rise to renewable infrastructure as an investable asset class.

**What drives returns and what are the risks?**
Renewable infrastructure funds aim for annual returns in the region of 7% to 9%, including dividend yields of around 5% to 6%. These returns are generated from a mix of government subsidies and the sale of power to utility companies. Given the security of cash flows, funds often raise debt to enhance returns to investors. A loan-to-value ratio of between 30% and 45% is common.

For example, investors in solar assets typically benefit from a 25-year revenue stream. About 50% to 60% of that revenue comes from government subsidies. This is a reliable source of income that increases in line with inflation each year. The remaining 40% to 50% comes from selling energy to power companies and consumers. This is sensitive to changes in power prices but, where appropriate, funds use Power Purchase Agreements to provide some certainty over price.

The amount of electricity generated also influences returns. This is dependent on resource variability – for example, the level of solar irradiation or wind speed – and plant performance and costs.

Government policy on subsidies provides another source of uncertainty. Investors also need to monitor technological changes.
Diversification benefits

Renewable infrastructure assets typically have long economic lives with relatively reliable revenue streams. Although there is some sensitivity to power prices, returns are not significantly affected by economic or market conditions. Equity market moves have little effect on the prices of infrastructure assets, providing diversification benefits.

Initially, these funds invested primarily in operational UK-based solar and wind farms. In recent years, they have diversified into Ireland, France, Sweden and Australia and the US.

There has also been diversification by technology, with investments in storage devices. These batteries could solve a long-standing problem for wind and solar farms, allowing them to store energy and release it into the grid in times of peak demand. Making fuel from organic materials, using anaerobic digestion, is another area of interest.

How to access the asset class

State funding often fails to provide enough capital to build and sustain sufficient renewable infrastructure. Private funding makes up the shortfall. The capital for new wind farms usually comes from large utility companies. Solar power facilities tend to turn to smaller private developers for funding. However, neither organisation is a natural long-term owner of these assets. This is where other investors, such as closed-end renewable infrastructure funds, come in. As permanent capital vehicles, these funds are well-suited to holding assets with long lives.

Several funds listed on the London Stock Exchange between 2013 and 2014, with the aim of buying wind and solar farms. To help support the sector’s growth, the UK government invested in Greencoat UK Wind, the first fund to be launched. These funds have accumulated around £5 billion in assets and are major holders of the UK’s renewable energy infrastructure.

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*Source: Bloomberg New Energy Finance - New Energy Outlook 2018, June 2018*
“Yields from social infrastructure compare favourably to government bonds. These investments are long-term and government-backed.”
Social infrastructure

In brief
Social infrastructure plays a critical role in economic activity, productivity and social welfare. It can be defined as the things that are necessary for a society to function.

Investment opportunity
It includes everything from schools, hospitals and prisons to transport networks such as roads and trains. Historically, local and national governments were responsible for creating and maintaining such buildings and services.

Changing demographics have made infrastructure even more of a priority for governments across the world. With public funds limited, social infrastructure companies provide the capital to help to fund investment. They can deliver better public services through operational efficiencies. They also transfer the risks of ownership to the private sector.

What drives returns and what are the risks?
Public-private partnerships (PPPs) access private capital to develop vital social infrastructure. Introduced in the UK in the early 1990s, the use of these partnerships increased in 1997. Following the election of a new Labour government, they became the preferred funding method for large infrastructure projects. Over the past 20 years, over 700 projects have employed around £60 billion of private capital.

Many other countries, facing similar constraints on their budgets and public debt, have adopted the same kind of model. Both developed and emerging countries have contributed to significant growth in the overall PPP market.

The owner of an infrastructure asset receives regular payments in return for it being operational and available for use. These payments come from a public authority, usually the government. Concessions tend to last for decades and payments are often inflation-linked. Demand and pricing risk is therefore limited.

Yields compare favourably to government bonds. These investments are long-term and government-backed. As a result, the asset class has attracted significant amounts of capital.

Typically, a special-purpose vehicle (SPV) is set up for each infrastructure project. The SPV is ‘bankruptcy remote’ – legally and financially distinct from its parent entity. Projects are funded by a mixture of long-term debt and equity capital. Debt providers are attracted by the prospect of long-term, stable and reliable revenue streams that such projects can offer.

Equity investors work with construction and facilities management partners to develop and operate projects. The construction company and operator are responsible for the quality of the project and its daily running.

For the equity investor, counterparty risk is an important factor. Equity investors are responsible for any costs incurred by the client if the infrastructure asset is not available for use. For taking on this risk, they typically earn a return of around 7% from operational projects.

Diversification benefits
The contracts associated with social infrastructure assets tend to be long-dated in nature. They generate predictable cash flows, based on asset availability rather than usage. Backing is provided by governments or regulatory regimes. In many cases, the revenues from each contract are inflation-linked. As a result, social infrastructure can provide investors with particularly strong diversification benefits.

How to access the asset class
Social infrastructure became an asset class offering daily dealing when the first UK-listed infrastructure fund, HICL, launched in 2006. Now investors can access the asset class through a number of listed investment companies that provide equity capital to infrastructure projects. These long-lived assets are well-suited to ‘permanent capital’ vehicles. These companies provide investors with access to infrastructure projects across the UK, Europe, North America and Australia.
“Genuine diversification comes when a portfolio is exposed to different risk factors”
The opportunity set has increased for most investors over the past two decades. But what are the practical issues that an investor needs to tackle to construct a diversified portfolio?

Until recently, only the world’s most sophisticated institutional investors had access to many alternative asset classes. University endowments, sovereign wealth funds and major pension funds share the ability to assess and access the widest range of opportunities. Such investors are able to invest in less liquid investments. And they have the resources to conduct research and due diligence on markets requiring specialist knowledge.

Various developments, including the evolution of the listed alternatives market, have increased the accessibility of these asset classes. This gives individuals investors access to a genuinely diversified portfolio. However, there are practical considerations in managing a portfolio that exploits this diverse range of opportunities.

Investors must be able to:
• assess the return and risk characteristics of each asset class
• select the appropriate investments
• manage allocations on an ongoing basis
• ensure that risks are appropriately managed.

**Assessing return and risk**

What drives asset class returns? Each asset class can be thought of in terms of bundles of risk premia. Understanding these different risk premia allows investors to build a better understanding of the risk and return of the asset class. Genuine diversification comes when a portfolio is exposed to different risk factors.

- The equity risk premium, for example, compensates investors for being at the back of the queue to get their money back when things go wrong. Equities also tend to fall during economic recessions, when investors most need their wealth and risk aversion is at its most acute.
- The bond ‘term’ premium compensates investors for the risk that future inflation and interest rates will diverge from expectations.
- Corporate bonds offer a credit premium over government bonds in compensation for the risk of default.
- Private assets enjoy an illiquidity premium, compensating investors for the risk of not being able to access their capital when they need it.

The combinations of different risk premia for major asset classes are illustrated in Chart 10.

An investor’s goal is to understand the risk factors that drive these premia. They must assess whether the premia are sufficient relative to the risks at current valuation levels.

Strategic asset allocation incorporates valuation levels to predict long-term returns. For example, the equity risk premium varies substantially over time. When times are good and investors are optimistic about the future, risk premia can compress to low levels. This means expected returns are also low. By contrast, in the midst of a recession, investors’ need for capital and their risk aversion increases. The equity risk premium expands, sometimes to double digits, driving expected returns higher.

**Chart 10: illustrative view on US asset class risk premia (%)**

Source: Aberdeen Standard Investments, June 2019

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Strategic asset allocation aims to improve returns by providing a disciplined process for recycling capital from expensive assets to cheaper ones – those with higher risk-adjusted expected returns.

The key to diversification is to find assets whose returns are driven by largely independent factors. Equity returns are closely linked to the business cycle. Therefore effective diversification requires assets whose returns are not affected by this cycle. This is where finding new asset classes and understanding the different drivers of return pays dividends.

Investors also need to consider risks and opportunities associated with environmental, social and governance factors. The need to reduce carbon emissions has driven demand for renewable energy – and a need for capital to finance its development.

Good governance is a key consideration for investors accessing alternative assets through investment companies. Share price movements do not always follow the movement in underlying values. If a share price trades at significant discount to the underlying value, the board of the company can act to support the share price. The company can sell assets and use the proceeds to buy back shares. If the discount persists despite these actions, investors can trigger a continuation vote: asking for all assets to be sold and the proceeds returned to shareholders.

This time is different?

Another key component of strategic asset allocation is forming a view on how the future will be different from the past. Structural economic change can have a dramatic impact on asset class returns. Historical investment returns reflect yesterday’s economic and market circumstances and are not a reliable guide to the future.

Government bonds provide the key example. This asset class has delivered returns of 5% – 7% over the past 20 years. Will it continue to do so over the next 20? This is almost mathematically impossible. Central bank interest rates are well below average in the US and near zero in Europe and Japan. The term premium, the additional yield earned for holding longer-dated bonds, is also low, around 0% versus a long-term average of between 1% and 2%. Consequently, yields on long-dated bonds – and hence expected returns – are unusually low.

Over the longer term (five to ten years), economic developments are driven by secular factors such as trends in demography, productivity, inflation and equilibrium interest rates. How will ageing populations affect economic growth? How will today’s weak business investment affect future productivity? Will the global savings glut persist in depressing interest rates?

However, over the medium term (three to five years), markets are driven more by the familiar pattern of recession and recovery associated with the business cycle. They respond to related credit and policy interest rate cycles. Within this shorter time frame, the risk premia of economically exposed assets vary substantially and are a key driver of returns5.

The most attractive opportunities change over time. Asset allocation should be dynamic rather than static. Portfolios should be positioned to benefit from the future expected return and risk environment, rather than the past. No asset class should be guaranteed a place in the portfolio.

Building a diversified portfolio

A successful outcome requires expert portfolio construction. Multiple factors need to be considered in setting the asset allocation. Investors need to consider the overall balance of investment objectives in terms of return and risk characteristics. Different asset blends can target particular return outcomes and offer different risk characteristics. For example, a different approach is needed if the focus is to reduce the risk of capital loss rather than managing risk relative to a benchmark or peer group.

The earliest investors concentrated on total return. Since the 1980s, the focus of the investment industry has shifted to returns relative to a benchmark or peer group. This has led many investors to cluster around very similar asset allocations, with risk and return highly sensitive to equity and bond markets. These portfolios have delivered good long-term returns, but risk characteristics have been variable due to changing underlying correlations.

The investment industry can do far better. It can refocus on investors’ key goal: delivering long-term returns while managing the risk of capital loss.

The role of portfolio optimisation

In theory, it is possible to use optimisation techniques to identify the ideal portfolio. This can be calculated using the return and risk objectives for the portfolio, and the expected return and risk characteristics of each asset class. But investors should treat the results of any optimisation with caution. The ‘optimised’ mix is typically concentrated in a few asset classes and allocations are sensitive to small changes in the input assumptions. These assumptions are inherently uncertain in reality.

In practice, a broader perspective on risk leads to a more diversified approach. This is found to be more robust when actual returns inevitably differ from the forecasts.

Investors should adopt a pragmatic approach to reflect the degree of uncertainty in future risks and returns and to avoid concentration risk. A more qualitative assessment is needed to diversify the underlying drivers of return. Judgement is required alongside quantitative analysis.

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5Lettau and Ludvigson (2014) Shocks and Crashes. National Bureau of Economic Research Annual. Shows that over multi-decade horizons equity returns have been driven by long-term growth and secular shifts in the labour share of profits, but over the shorter term they are driven by cyclical changes in risk aversion and the equity risk premium.
A broader perspective on risk management

Statistical analysis has become more sophisticated over the past 30 years. Investors are increasingly reliant on backward-looking models of risk. However, not everything that is important can be measured, and not everything that can be measured is important.

Investment markets are driven by human emotions – particularly greed and fear. Markets can move from relative calm to chaos in a short space of time. At these turning points, standard risk models can be found wanting. It is therefore important to have a forward-looking perspective on risk.

Scenario analysis considers what might happen in different possible futures. Incorporating extreme events allows investors to understand how resilient their portfolios might be. This can throw up some very different results to backward-looking risk models.

Risk models using data from the past 30 years assume that government bonds will do well if equities sell off. This is because most market shocks have been growth shocks with deflationary effects. However, going further back to the 1970s, equity market sell-offs were triggered by inflation shocks. In those instances bonds sold off as well.

The next crisis could be characterised by inflation concerns – due to a global trade war or an oil price spike. In that scenario, portfolios that depend on government bond prices moving in the opposite direction to equities are likely to suffer. Indeed, in recent years bonds and equities have become increasingly positively correlated. Falling interest rates, supported by quantitative easing, have boosted both equity and bond prices. Just as there has been a positive correlation on the way up, so there may be on the way down.

Investors should also consider liquidity risk. Listed alternatives offer daily dealing in their shares. However, their liquidity is similar to other small or mid-cap equities so holdings need to be sized appropriately. It is important to not own too high a proportion of any company. Analysis should include gaining an understanding of whether a large portion of its stock is held by any single investor, whose actions could distort the share price. Within these constraints however, the long-term investor can potentially alter their position to benefit from temporary discounts or premia to net asset value.

All investments come with risks. Social infrastructure is subject to political, regulatory and project-specific risk. Renewable infrastructure is exposed to power price risk. And litigation finance faces risks associated with individual cases. The key benefit of a diversified portfolio is that these are largely independent risks – and unrelated to the economic risks associated with equity markets.
“A diversified multi-asset approach provides the broadest range of investment opportunities”
How has the evolution of multi-asset investing shaped best practice today? And what does the future hold? Investors want to reduce risk without sacrificing returns. A multi-asset investor can now do three things to help achieve this.

First, they can diversify across different asset classes. Since the global financial crisis, a range of new markets is now accessible through daily dealing vehicles. However, successful diversification requires different underlying drivers of return. Therefore, investors need to carry out fundamental analysis to understand if these different assets are enhancing diversification.

Second, they can dynamically manage their exposure to different asset classes. Portfolios should be positioned to benefit from the future expected return and risk environment, rather than the past. No asset class should be guaranteed a place in the portfolio.

Third, they can appropriately manage the risk. Advances in statistical analysis give access to multiple backwards-looking measures of risk. But the future does not always follow the patterns of the past. Forward-looking scenario analysis allows investors to stress-test portfolios against a range of possible outcomes.

A diversified multi-asset approach provides the broadest range of investment opportunities. Applying this successfully requires a strong understanding of the fundamentals of each asset class. Risk cannot be eliminated. But it can be understood, monitored and managed. A diversified multi-asset approach – backed by a fundamental understanding of the drivers of return – has the potential to deliver more consistent and attractive outcomes for investors.

Conclusion
Important Information

Investment involves risk. The value of investments, and the income from them, can go down as well as up and an investor may get back less than the amount invested. Past performance is not a guide to future results.

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